

***Remarks***

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1, 4, 7, 8, 10-16 and 31-34 are pending in the application, with 1, 12 and 13 being the independent claims. Claims 18-30 (as renumbered by the Examiner, see below) are sought to be canceled without prejudice to or disclaimer of the subject matter therein. New claims 31-34 are sought to be added.

The specification has been amended to incorporate the subject matter of original filed claims 11 and 16.

The Examiner pointed out that new claims 17-29, which were added in the Amendment and Reply Under 37 C.F.R. § 1.116, filed January 17, 2002 ("January 17 Amendment"), were renumbered as claims 18-30, respectively, by the Examiner for purposes of examination as the captioned application already contained claim 17 (canceled). Applicant has canceled claims 18-30 herein (claim 17 was already canceled).

Claim 1 has been amended to include the subject matter of canceled claim 2. Claims 1 and 12-15 have been amended to delete the recitation of "fine." Remaining amendments were made for better form and to change the dependency.

Claims 31-34 were added, directed to subject matter in the original filed claims.

These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendments and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

***Claim Objections***

The Examiner stated that claims 10 and 24 (now canceled) are objected to under 37 C.F.R. § 1.75(c), as allegedly being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant respectfully traverses this objection.

The Examiner stated that calcium oxalates are monohydrates according to McGraw-Hill Dictionary of Chemical Terms. Applicant submit that McGraw-Hill Dictionary is providing one definition of calcium oxalate but it is not the only definition. As previously pointed out by Applicant, the specification, at page 3, lines 20-24, defines calcium oxalate as " $\text{CaC}_2\text{O}_4 \cdot n\text{H}_2\text{O}$ " and mentions two forms of calcium oxalate. As further evidence that calcium oxalate is not just monohydrate, submitted herewith as Exhibit A are printouts from several websites on the internet disclosing calcium oxalate dihydrate. It is respectfully requested that the claim objections be withdrawn.

***Rejections Under 35 U.S.C. § 112, Second Paragraph***

Claims 1-4, 7, 8, and 10-16 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Applicant respectfully traverses this rejection.

The Examiner stated that the term "fine paper" is defined as uncoated paper but Applicant claims a paper that may comprise coating pigment (a coated paper). Applicant has established the definition of "fine paper" as uncoated paper. It is equally clear that something that is uncoated (e.g., paper) can be manipulated to be coated. However, the claims have been amended to delete the term "fine."

Claims 19, 20, 25 and 26 were rejected under 35 U.S.C. § 112, second paragraph, allegedly due to insufficient antecedent basis for "the pigment." Claims 19, 20, 25 and 26 have been canceled without prejudice or disclaimer.

It is respectfully requested that the rejections under 35 U.S.C. § 112, second paragraph, be withdrawn.

***Rejections Under 35 U.S.C. § 112, First Paragraph***

Claims 1-4, 7, 8, 10-16 and 18-30 (now canceled) were rejected under 35 U.S.C. § 112, first paragraph, allegedly for lack of enablement. According to the Examiner, the original disclosure does not describe to one of ordinary skill in the art how to determine the ISO brightness and opacity and Applicant must submit a copy of the incorporated test standards that predates the priority date of the invention (March 13, 1998) or these methods must be incorporated into the specification. Applicant respectfully traverses this rejection.

A Supplemental Reply Under 37 C.F.R. § 1.116 was filed January 23, 2002, submitting the following documents:

SCAN-P 8:93 (revised 1993)

SCAN-P 3:93 (revised 1993)

SCAN-P 6:75 (revised 1975)

SCAN-P7:96 (revised 1996) (replaced SCAN-P 7:75, *see*, Introduction)

Copies of these documents are resubmitted herewith as Exhibits A-D for the convenience of the Examiner.

Claims 2, 12, 19 (now canceled), 22 (now canceled), and 26 (now canceled) were rejected under 35 U.S.C. § 112, first paragraph, allegedly for lack of written description. The Examiner stated that there is no support in the original disclosure to support the limitation that "percent by weight" was the physical property upon which the claimed physical properties were based. Applicant respectfully traverses this rejection.

As provided in the January 17 Amendment, support for "by weight" in claims 2 and 12 can be found, for example, at page 6, lines 10-13. Further support can be found, for example, at page 7, lines 16-20, of the specification:

Calcium oxalate is used as a filler of the cellulosic material in a manner known per se. Thus, a stock is formed from mechanical or chemical pulp by slushing the pulp into water. Filler is added in desired amount, typically 0.1 to 90 %, preferably about 1 to 70 %, calculated from the total *weight* of the web, the consistency of the stock being generally about 0.1 to 5 %.

Emphasis added. Further support can be found, for example, at page 9, lines 10-29.

Claims 11 and 25 (now canceled) were rejected under 35 U.S.C. § 112, first paragraph, allegedly for lack of written description. According to the Examiner, the original disclosure contains no support for utilizing silica in combination with calcium oxalate. Applicant respectfully traverses this rejection.

Claim 11 is directed to using calcium oxalate and a second pigment selected from the recited group of compounds. Support for claim 11 can be found, for example, in original claim 11 as filed, which is also considered legally to be a part of the original specification filed. *See*, M.P.E.P. 2162, 2100-155 (Aug. 2001) (citing *In re Koller*, 204 USPQ 702 (CCPA 1980); *In re Wertheim*, 191 USPQ 90 (CCPA 1976); *In re Gardner*, 177 USPQ 396 (CCPA

1973)). Moreover, Applicant has amended the specification to include all embodiments of original claim 11 in the paragraph bridging pages 7 and 8 of the specification.

Claims 16 and 30 (now canceled) were rejected under 35 U.S.C. § 112, first paragraph, allegedly for lack of written description. The Examiner stated that there is no support in the original specification for a paper comprising 91-100% calcium oxalate and that the "broadest support the examiner could find in the specification was on page 7, which teaches that the paper may comprise 1-90% filler." Applicant respectfully traverses this rejection.

Applicant remind the Examiner that claim 16 recites that "the total content of calcium oxalate is over 85% of the total weight of the dry matter of said coated, wood-free, fine paper." Thus, it is unclear to Applicant why the Examiner is referring to "91-100%." Clarification on this pointed is requested. Support for "over 85%" is found, for example, in original claim 16 as filed, which is legally also considered a part of the original specification filed, as discussed above. Moreover, in the January 17 Amendment, Applicant explained as follows:

Applicant point out that in addition to the disclosure in page 7, as noted by the Examiner, the specification, at page 6, lines 12-13, states that "[p]referably, the calcium oxalate proportion of the entire amount of pigments and fillers is about 10 to 100, in particular 10 to 95%." Thus, the specification contains support for "a paper comprising 91-100% calcium oxalate."

Thus, the specification conveys to one of ordinary skill in the art that the inventor had possession of the claimed invention - paper comprising over 85% calcium oxalate," up to

100%. Moreover, Applicant has amended the specification to include the embodiment of original claim 16 in the first full paragraph at page 6 of the specification.

It is respectfully requested that the rejections under 35 U.S.C. § 112, first paragraph, be withdrawn.

***Rejections Under 35 U.S.C. § 103***

Claims 1-4, 7 (1-4), 10(1-4), 11 (1-4), 12-15, 18-21, 22 (18-21), 24 (18-21) 25 (18-21), and 26-29 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Matsuda *et al.* (U.S. Patent No. 5,92,546) in view of SE8904337 A ("Carno"). Applicant respectfully traverses this rejection.

Claims 18-21, 22, 24, 25 and 26-29 have been canceled. In regard to independent claims 1, 12 and 13, the arguments provided by Applicant in the January 17 Amendment are reiterated herein. Matsuda *et al.* relates to transfer paper for forming color images in the electrophotographic system. Carno relates to paper made of *ligneous pulp* or *mechanical pulp*, i.e., newsprint paper, and reducing light induced yellowing of ligneous pulp by adding calcium oxalate. Carno, at page 2, lines 9-10, *speculates* that "[c]alcium oxalate like other oxalates has a bleaching capability against formed coloured substances like quinone compounds." Carno, however, does not teach or suggest that calcium oxalate can be used as a brightness increasing coating pigment (note that wood-free paper as claimed does not contain ligneous pulp and thus would not contain quinone, which is formed by absorption of photo energy in the lignin, *see*, Carno, p. 1, lines 20-22).

However, the Examiner appears to state that it would have been obvious to replace a pigment of Matsuda by the calcium oxalate of Carno. On page 5 of the Office Action, the Examiner suggests that the substitution would be based on the finding in Carno that "calcium oxalate has the property of bleaching formed colored structures and prevents light induced yellowing of paper pulp." The light induced yellowing takes place in the fibers of wood-containing pulps. The chemical groups which are responsible for the change of color are present in the fibers, in particular in the lignin part thereof. They are not present in the coating. There will not be any yellowing of the coating. Why would then a person of ordinary skill in the art use calcium oxalate "which has the property of bleaching colored structures" (as stated by the Examiner) and incorporate it into a coating color of wood-free paper which does not exhibit any light-induced yellowing? It is clear there is no motivation to do so. In fact, Carno is a teaching away from the claimed invention because a person of ordinary skill in the art would not seek to protect paper against light-induced yellowing if the paper is not susceptible to such yellowing.

It was well known in the art at the priority date of the captioned application that the problem of yellowing as for newsprint is not an issue for wood-free paper. Newsprint yellows rapidly, in about a week, whereas fine paper does not. The issue for fine paper is brightness and opacity, not whether it would yellow. Thus, one of ordinary skill in the art would not have been motivated to combine Matsuda *et al.* and Carno.

Yellowing of wood-containing papers is discussed in U.S. Patent No. 5,658,431. Exhibit F. Also submitted herewith as Exhibit G is a copy of Norsk Skogindustri, No. 6, 1975, page 160, comprising an article by E. Böhmer: "Is mechanical pulp acceptable in

wood-free papers?" The author specifically states at the bottom of the left-hand column that "The question is now . . . whether we freely can recommend such products [mechanical pulps] for the use in fine papers. Unfortunately this is not so . . . ." In the following column he also notes that: "Today we cannot treat the mechanical pulp economically in such a way that it becomes light stable."

Moreover, even assuming *arguendo* that one of ordinary skill in the art would have been motivated to combine Matsuda *et al.* and Carno, which one would not have been, the combination of the two documents would not have suggested the claimed invention of wood-free paper containing calcium oxalate. As previously mentioned by Applicant, according to Exhibit 1 of the Amendment and Reply Under 37 C.F.R. § 1.111, filed April 25, 2001 ("April 25 Amendment"), "lignin" is "[a] complex constituent of the wood that cement the cellulose fibers together" and "mechanical pulp" is "[p]ulp produced by mechanically grinding logs or wood chips. It is used mainly for newsprint and as an ingredient of base stock for lower grade printing papers." The claims of the captioned application are directed to "wood-free paper," which does not contain ligneous pulp or mechanical pulp. *See*, Exhibit 1 of the April 25 Amendment. Thus, based on the combination of Matsuda *et al.* and Carno, one of ordinary skill in the art could not have come up with the claimed invention, i.e., using calcium oxalate as filler or pigment in *wood-free* paper. At most, one would have arguably come up with *wood-containing* paper. It is legally impermissible for the Examiner to use hindsight, i.e., the teachings of the captioned application, to establish a *prima facie* case of obviousness. *See, Para-Ordinance Mfg, Inc. v. SGS Importers Intl., Inc.*, 37 USPQ2d 1237



(Fed. Cir. 1995) ("Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor.").

Thus, newsprint is different from high-quality printing papers which have archive-quality. It is, indeed, quite surprising that by replacing a part or all of the conventional pigments of a coating color, the inventor is able to provide a coated, wood-free paper having excellent optical properties. At the same time the combustion residue can be reduced, which is extremely important for recycling of coated papers. As known, present-day coated papers can contain mineral pigments in amounts in excess of 50% of the total weight of the paper or board. The normal printing papers contain more "stone" than "fiber." The fiber is merely a matrix which gives proper mechanical properties to the paper or board sheet. Faced with the problem of recycling increasing amount of pigments, the person of ordinary skill in the art will be happy to see that papers or boards according to the present invention can be burnt, the energy recovered and the combustion residue reduced.

Moreover, the Examiner is directed to the surprisingly good properties as a result of the claimed invention. On page 4, 2nd paragraph, the specification discloses that the light scattering coefficient in combination with pigment packing gives a much better optical effect than could be expected based on the rather modest refractive index.

Applicant stresses that the optical properties of the calcium oxalate are so excellent that a considerable portion of the pigment of the coating (at least 10%) or even all of it (100%) can be comprised of calcium oxalate and still can reach the excellent brightness and opacity mentioned in the preamble of the claim. Furthermore, without incorporating enough of the calcium oxalate, there is no significant effect on the amount of combustion residue.

Thus, in summary, by using at least 10% calcium oxalate as a coating pigment, as recited in the claims, less ash is obtained while still reaching the target brightness and opacity. This pigment use of calcium oxalate has nothing to do with prevention of yellowing. There will not even be any prevention of yellowing, since wood-free paper will not yellow.

The same arguments above apply to the rejected dependent claims.

Claims 8 and 23 (now canceled) were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hampl in view of Carno, and further in view of Hampl (U.S. Patent No. 5,893,372) or Griffiths *et al.* (U.S. Patent No. 3,928,122). Applicant respectfully traverses this rejection.

Applicant respectfully request confirmation whether the Examiner intended a rejection over Matsuda in view of Carno, and further in view of Hampl or Griffiths. Claim 8 depends from claims 1-4. For the reasons provided above, as claims 1-4 are nonobvious, claim 8 is also nonobvious over Matsuda in view of Carno, and further in view of Hampl or Griffiths *et al.* According to the Examiner, "Hampl teaches that particle size affects opacity, whiteness and brightness (col. 4, lines 55-60). Griffiths similarly teaches that it is known that the opacity of a white filler is affected by its particle size (col. 3, lines 50-58)." Hampl or Griffiths *et al.* fails to remedy the deficiencies of Matsuda and Carno.

Claims 18-21, 22, 24, 25, and 26-29 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Post *et al.* (U.S. Patent No. 4,445,970), in view of SE8904337A. Claims 18-21, 22, 24, 25 and 26-29 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hampl (U.S. Patent No. 5,893,372) in view of Carno. Claim 23 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Post,

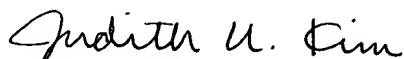
or Matsuda, in view of Carno, and in further view of Hampl (U.S. Patent No. 5,893,372) or Griffiths *et al.* (U.S. Patent No. 3,928,122). Claims 18-29 have been canceled without prejudice or disclaimer.

In view of the above, it is respectfully requested that the rejections under 35 U.S.C. § 103(a) be withdrawn.

### ***Conclusion***

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided. Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,  
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Judith U. Kim  
Attorney for Applicant  
Registration No. 40,679

Date: January 31, 2003  
1100 New York Avenue, N.W.  
Washington, D.C. 20005-3934  
(202) 371-2600

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**Version with markings to show changes made**

***In the Specification***

Paragraph beginning on page 6, line 10:

As a filler, calcium oxalate is applied in amounts of about 0.1 to 90%, preferably about 1 to 80% of the dry matter, and as a pigment it can be applied at about 1 to 100 g/m<sup>2</sup> for each side of the web. Preferably the calcium oxalate proportion of the entire amount of pigments and fillers is about 10 to 100, in particular 10 to 95%. The total content of calcium oxalate can be over 85% of the dry matter of the paper.

Paragraph bridging pages 7 and 8:

Calcium oxalate can be formulated into suitable coating colours. In the present invention "coating colour" means a composition designed for the coating or surfacing of paper or board, containing water and components known per se, such as pigments, binding agent and a component regulating the viscosity (a thickening agent). In addition to calcium oxalate, the following pigments can be used: calcium carbonate, calcium sulphate, aluminum silicate, kaolin (aluminum silicate containing crystallization water), aluminum hydroxide, magnesium silicate, talc (magnesium silicate containing crystallization water), titanium oxide, silica, and barium sulphate and mixtures of these. Also synthetic pigments may be employed. Primary pigments of those mentioned above are calcium oxalate, kaolin and/or calcium carbonate, usually amounting to over 50% of the dry matter of the coating composition. Calcinated kaolin, titanium oxide, precipitated carbonate, satin white, aluminum hydroxide, sodium silica aluminate and plastic pigments are additional pigments and the amounts of these are usually below 25% of the dry matter content of the mixture. Special pigments to be mentioned are special kaolins and calcium carbonates and barium sulphate and zinc oxide.

*In the Claims*

Claims 2, 3 and 18-30 have been canceled.

The following claims have been amended:

1. (Three times amended) A method of reducing [the] combustion residue of coated, wood-free paper [, fine papers] having an ISO brightness of 80% or more and an opacity of 80% or more, wherein said method comprises making said coated, wood-free [, fine] paper with a [filler and/or] coating pigment [that comprises] comprising calcium oxalate, wherein a proportion of the calcium oxalate in the pigment is between 10% and 100% by weight of the pigment.

7. (Twice amended) The method according to any one of claims 1, 4 and 31 [1-4], wherein the amount of calcium oxalate is 0.1 to 90% by weight, calculated from [the] a total weight of [the] dry matter of the coated, wood-free [, fine] paper.

8. (Three times amended) The method according to any one of claims 1, 4 and 31 [1-4], wherein said calcium oxalate is a monohydrate that has been ground and over 90% of the particles of said ground calcium oxalate that are used are smaller than 2.3  $\mu\text{m}$  and only 10% are smaller than 0.5  $\mu\text{m}$ .

10. (Twice amended) The method according to any one of claims 1, 4 and 31 [1-4], wherein said calcium oxalate is calcium oxalate monohydrate.

11. (Twice amended) The method according to any one of claims 1, 4 and 31 [1-4], said method further comprising using a second pigment or filler selected from the group consisting of calcium carbonate, calcium sulphate, aluminum silicate, kaolin, aluminum hydroxide, magnesium silicate, talc, titanium dioxide, silica, barium sulphate and combinations thereof.

12. (Three times amended) A method of reducing [the] wear of a coated, wood-free [, fine] paper-making wire wherein said method comprises incorporating calcium oxalate into said coated, wood-free [, fine] paper or into [the] a coating color used in said coated, wood-free [, fine] paper wherein said calcium oxalate comprises 10 to 100% by weight of [the] total pigment.

13. (Three times amended) Coated, wood-free [, fine] paper, wherein said fine paper:

- ] paper comprising a pigment comprising calcium oxalate, wherein said coated, wood-free paper has an ISO brightness of over 80% and an opacity of over 80%  
[and
- contains calcium oxalate as a [filler and/or] pigment].

14. (Three times amended) The coated, wood-free [, fine] paper according to claim 13 or 33, wherein said coated, wood-free [, fine] paper has a maximum combustion residue of 35%, calculated from [the] a total weight of [the] dry matter of the coated, wood-free [, fine] paper.

15. (Three times amended) The coated, wood-free [, fine] paper of claim 13 or 33, wherein said coated, wood-free [, fine] paper further comprises fillers [and/or] or coating pigments other than calcium oxalate.

Claims 31-34 have been added.